Claims

What is claimed is:

1.   A method of reconfiguring publish/subscribe systems, said method comprising:

initiating a reconfiguration of a publish/subscribe system; and

reconfiguring said publish/subscribe system, wherein one or more messages of said publish/subscribe system are not lost during said reconfiguring.

2. The method of claim 1, wherein said reconfiguring is non-disruptive to said publish/subscribe system.

3. The method of claim 1, wherein said reconfiguring comprises changing from a first routing path between one node of said publish/subscribe system and another node of said publish/subscribe system to a second routing path between said one node and said another node.

4. The method of claim 3, wherein said first path is designated in a first routing table and said second path is designated in a second routing table and wherein said changing comprises selecting said second routing table.

5. The method of claim 1, wherein said publish/subscribe system comprises an ordering requirement for delivery of one or more messages from at least one node to at least one other node of said publish/subscribe system, and wherein said reconfiguring preserves said ordering of delivery of said one or more messages.

6. The method of claim 1, wherein said initiating comprises forwarding a reconfiguration request from a configuration manager to one or more nodes of said publish/subscribe system.

7. The method of claim 1, wherein said reconfiguring comprises:

selecting a new routing path to be used in forwarding one or more messages within said publish/subscribe system; and

updating one or more data structures associated with one or more nodes of said publish/subscribe system to reflect said reconfiguring.

8. The method of claim 1, further comprising forwarding a message from at least one node of said publish/subscribe system to at least one other node of said publish/subscribe system, after said reconfiguration is initiated.

9. The method of claim 8, further comprising determining whether an old routing path or a new routing path is to be used in forwarding said message.

10. The method of claim 9, further comprising forwarding another message from at least one node of said publish/subscribe system to at least one other node of said publish/subscribe system, wherein said another message is forwarded using a different routing path than said message.

11. The method of claim 8, wherein said message comprises a CS-message, and wherein said method further comprises refraining from delivering said CS-message to a node of said publish/subscribe system, until after one or more other messages are at least ready for delivery to said node, such that ordering of delivery of said CS-message is preserved.

12. The method of claim 11, wherein said one or more other messages are forwarded to said node via an old routing path and said CS-message is forwarded to said node via a new routing path.

13. The method of claim 11, further comprising transferring said CS-message from a held queue to a delivery queue, such that said CS-message can be delivered, after an originating node of said CS-message has completed forwarding to said delivery queue any messages forwarded to said node via an old path.

14. The method of claim 8, wherein said message comprises an SC-message, and wherein said method further comprises refraining from delivering said SC-message to a node of said publish/subscribe system, when a new routing path is used for said SC-message, until a predefined event occurs.

15. The method of claim 14, wherein said predefined event comprises receipt of a switch message at said node.

16. The method of claim 15, further comprising transferring said SC-message from a held queue to a delivery queue, as a result of said receipt of said switch message, such that said SC-message can be delivered.

17.   A system of reconfiguring publish/subscribe systems, said system comprising:

means for initiating a reconfiguration of a publish/subscribe system; and

means for reconfiguring said publish/subscribe system, wherein one or more messages of said publish/subscribe system are not lost during the reconfiguring.

18. The system of claim 17, wherein the reconfiguring is non-disruptive to said publish/ subscribe system.

19. The system of claim 17, wherein said means for reconfiguring comprises means for changing from a first routing path between one node of said publish/subscribe system and another node of said publish/subscribe system to a second routing path between said one node and said another node.

20. The system of claim 19, wherein said first path is designated in a first routing table and said second path is designated in a second routing table and wherein said means for changing comprises means for selecting said second routing table.

21. The system of claim 17, wherein said publish/subscribe system comprises an ordering requirement for delivery of one or more messages from at least one node to at least one other node of said publish/subscribe system, and wherein said means for reconfiguring preserves said ordering of delivery of said one or more messages.

22. The system of claim 17, wherein said means for initiating comprises means for forwarding a reconfiguration request from a configuration manager to one or more nodes of said publish/subscribe system.

23. The system of claim 17, wherein said means for reconfiguring comprises:

means for selecting a new routing path to be used in forwarding one or more messages within said publish/subscribe system; and

means for updating one or more data structures associated with one or more nodes of said publish/subscribe system to reflect said reconfiguring.

24. The system of claim 17, further comprising means for forwarding a message from at least one node of said publish/subscribe system to at least one other node of said publish/subscribe system, after the reconfiguration is initiated.

25. The system of claim 24, further comprising means for determining whether an old routing path or a new routing path is to be used in forwarding said message.

26. The system of claim 25, further comprising means for forwarding another message from at least one node of said publish/subscribe system to at least one other node of said publish/subscribe system, wherein said another message is forwarded using a different routing path than said message.

27. The system of claim 24, wherein said message comprises a CS-message, and wherein said system further comprises means for refraining from delivering said CS-message to a node of said publish/subscribe system, until after one or more other messages are at least ready for delivery to said node, such that ordering of delivery of said CS-message is preserved.

28. The system of claim 27, wherein said one or more other messages are forwarded to said node via an old routing path and said CS-message is forwarded to said node via a new routing path.

29. The system of claim 27, further comprising means for transferring said CS-message from a held queue to a delivery queue, such that said CS-message can be delivered, after an originating node of said CS-message has completed forwarding to said delivery queue any messages forwarded to said node via an old path.

30. The system of claim 24, wherein said message comprises an SC-message, and wherein said system further comprises means for refraining from delivering said SC-message to a node of said publish/subscribe system, when a new routing path is used for said SC-message, until a predefined event occurs.

31. The system of claim 30, wherein said predefined event comprises receipt of a switch message at said node.

32. The system of claim 31, further comprising means for transferring said SC-message from a held queue to a delivery queue, as a result of said receipt of said switch message, such that said SC-message can be delivered.

33. A system of reconfiguring publish/subscribe systems, said system comprising:

a configuration manager adapted to initiate a reconfiguration of a publish/subscribe system; and

one or more nodes of said publish/ subscribe system adapted to reconfigure said publish/subscribe system, wherein one or more messages of said publish/subscribe system are not lost during the reconfiguring.

34. The system of claim 33, wherein said configuration manager is adapted to forward a reconfiguration request to one or more nodes of said publish/subscribe system to initiate said reconfiguration.

35. The system of claim 33, further comprising at least one node of said publish/subscribe system adapted to forward a message to at least one other node of said publish/subscribe system, after said reconfiguration is initiated.

36. An article of manufacture, comprising:

at least one computer usable medium having computer readable program code means embodied therein for causing the reconfiguring of publish/subscribe systems, the computer readable program code means in said article of manufacture comprising:

computer readable program code means for causing a computer to initiate a reconfiguration of a publish/subscribe system; and

computer readable program code means for causing a computer to reconfigure said publish/subscribe system, wherein one or more messages of said publish/subscribe system are not lost during the reconfiguring.

37. The article of manufacture of claim 36, wherein said computer readable program code means for causing a computer to reconfigure comprises computer readable program code means for causing a computer to change from a first routing path between one node of said publish/subscribe system and another node of said publish/subscribe system to a second routing path between said one node and said another node.

38. The article of manufacture of claim 36, wherein said publish/subscribe system comprises an ordering requirement for delivery of one or more messages from at least one node to at least one other node of said publish/subscribe system, and wherein said computer readable program code means for causing a computer to reconfigure preserves said ordering of delivery of said one or more messages.

39. The article of manufacture of claim 36, further comprising computer readable program code means for causing a computer to forward a message from at least one node of said publish/subscribe system to at least one other node of said publish/subscribe system, after said reconfiguration is initiated.

40. At least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method of reconfiguring publish/subscribe systems, said method comprising:

initiating a reconfiguration of a publish/subscribe system; and

reconfiguring said publish/subscribe system, wherein one or more messages of said publish/subscribe system are not lost during said reconfiguring.

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